

What is claimed is:

1. A snowmobile, comprising:
  - a frame;
  - a straddle-type seat disposed on the frame;
  - first and second seat positions defined by the seat;
  - an engine disposed on the frame in front of the seat;
  - a drive track disposed below the frame and connected operatively to the engine for propulsion of the snowmobile;
  - a forward-most drive track axle disposed on the frame;
  - two skis disposed on the frame;
  - a steering device having a steering position; and
  - a steering shaft operatively connecting the two skis to the steering device for steering the snowmobile, wherein the steering shaft is disposed over the engine at an angle  $\varepsilon$  of less than  $45^\circ$  from vertical, the first seat position is disposed less than 590 mm behind the forward-most drive track axle, and the second seat position is disposed behind the first seat position by between 265 mm and 365 mm.
2. The snowmobile of claim 1, wherein angle  $\varepsilon$  is between  $25^\circ$  and  $40^\circ$  from vertical.
3. The snowmobile of claim 2, wherein angle  $\varepsilon$  is between  $30^\circ$  and  $35^\circ$  from vertical.
4. The snowmobile of claim 3, wherein angle  $\varepsilon$  is  $33^\circ$  from vertical.
5. The snowmobile of claim 1, wherein the first seat position is disposed between 550 mm and 580 mm behind the forward-most drive track axle.
6. The snowmobile of claim 5, wherein the first seat position is disposed between 560 mm and 570 mm behind the forward-most drive track axle.
7. The snowmobile of claim 6, wherein the first seat position is disposed about 565 mm behind the forward-most drive track axle.

8. The snowmobile of claim 1, wherein the second seat position is disposed behind the first seat position by between 325 mm and 355 mm.

9. The snowmobile of claim 8, wherein the second seat position is disposed behind the first seat position by between 335 mm and 345 mm.

10. The snowmobile of claim 9, wherein the second seat position is disposed behind the first seat position by about 340 mm.

11. The snowmobile of claim 1, wherein the second seat position is disposed behind the first seat position by between 275 mm and 305 mm.

12. The snowmobile of claim 11, wherein the second seat position is disposed behind the first seat position by between 285 mm and 295 mm.

13. The snowmobile of claim 12, wherein the second seat position is disposed behind the first seat position by about 290 mm.

14. The snowmobile of claim 1 further comprising a third seat position on the seat, wherein the third seat position is disposed behind the second seat position by between 285 mm and 370 mm.

15. The snowmobile of claim 14, wherein the third seat position is disposed behind the second seat position by between 295 mm and 325 mm.

16. The snowmobile of claim 15, wherein the third seat position is disposed behind the second seat position by between 305 and 315 mm.

17. The snowmobile of claim 16, wherein the third seat position is disposed behind the second seat position by about 310 mm.

18. The snowmobile of claim 14, wherein the third seat position is disposed behind the second seat position by between 330 mm and 360 mm.

19. The snowmobile of claim 18, wherein the third seat position is disposed behind the second seat position by between 340 mm and 350 mm.

20. The snowmobile of claim 19, wherein the third seat position is disposed behind the second seat position by about 345 mm.

21. The snowmobile of claim 1, wherein the first and second seat positions are disposed on a singular seat unit.

22. The snowmobile of claim 1, wherein the seat comprises first and second seat sections, the second seat section being removable, the first seat position being on the first seat section, and the second seat position being on the second seat section.

23. The snowmobile of claim 22, wherein a cargo space is provided behind the first seat section beneath the second removable seat section.

24. The snowmobile of claim 14, wherein the first, second, and third seat positions are disposed on a singular seat unit.

25. The snowmobile of claim 14, wherein the seat comprises first and second seat sections, the second seat section being removable, the first and second seat positions being on the first seat section, and the third seat position being on the second seat section.

26. A snowmobile, comprising:  
a frame;  
a straddle-type seat disposed on the frame;  
first and second seat positions defined by the seat;  
an engine disposed on the frame in front of the seat;  
a drive track disposed below the frame and connected operatively to the engine for propulsion of the snowmobile;

a forward-most drive track axle disposed on the frame;  
a steering device having a steering position; and  
two skis disposed on the frame and operatively connected to the steering device, wherein the steering position is disposed forward of the forward-most drive track axle, a horizontal distance between the forward-most drive track axle and the first seat position is less than 590 mm, and the second seat position is disposed behind the first seat position by between 265 mm and 365 mm.

27. The snowmobile of claim 26, wherein the second seat position is disposed behind the first seat position by between 325 mm and 355 mm.

28. The snowmobile of claim 27, wherein the second seat position is disposed behind the first seat position by between 335 mm and 345 mm.

29. The snowmobile of claim 28, wherein the second seat position is disposed behind the first seat position by about 340 mm.

30. The snowmobile of claim 26, wherein the second seat position is disposed behind the first seat position by between 275 mm and 305 mm.

31. The snowmobile of claim 30, wherein the second seat position is disposed behind the first seat position by between 285 mm and 295 mm.

32. The snowmobile of claim 31, wherein the second seat position is disposed behind the first seat position by about 290 mm.

33. The snowmobile of claim 26, wherein the steering position is disposed forward of the forward-most drive track axle by between 40 mm and 90 mm.

34. The snowmobile of claim 33, wherein the steering position is disposed forward of the forward-most drive track axle by between 50 mm and 80 mm.

35. The snowmobile of claim 34, wherein the steering position is disposed forward of the forward-most drive track axle by between 60 mm and 70 mm.

36. The snowmobile of claim 35, wherein the steering position is disposed forward of the forward-most drive track axle by about 65 mm.

37. The snowmobile of claim 26, wherein the horizontal distance between the forward-most drive track axle and the first seat position is between 550 mm and 580 mm.

38. The snowmobile of claim 37, wherein the horizontal distance between the forward-most drive track axle and the first seat position is between 560 mm and 570 mm.

39. The snowmobile of claim 38, wherein the horizontal distance between the forward-most drive track axle and the first seat position is about 565 mm.

40. The snowmobile of claim 26, further comprising a third seat position on the seat, wherein the third seat position is disposed behind the second seat position by 285 mm and 370 mm.

41. The snowmobile of claim 40, wherein the third seat position is disposed behind the second seat position by between 295 mm and 325 mm.

42. The snowmobile of claim 41, wherein the third seat position is disposed behind the second seat position by between 305 and 315 mm.

43. The snowmobile of claim 42, wherein the third seat position is disposed behind the second seat position by about 310 mm.

44. The snowmobile of claim 40, wherein the third seat position is disposed behind the second seat position by between 330 mm and 360 mm.

45. The snowmobile of claim 44, wherein the third seat position is disposed behind the second seat position by between 340 mm and 350 mm.

46. The snowmobile of claim 45, wherein the third seat position is disposed behind the second seat position by about 345 mm.

47. The snowmobile of claim 26, wherein the first and second seat positions are disposed on a singular seat unit.

48. The snowmobile of claim 26, wherein the seat comprises first and second seat sections, the second seat section being removable, the first seat position being on the first seat section, and the second seat position being on the second seat section.

49. The snowmobile of claim 48, wherein a cargo space is provided behind the first seat section beneath the second removable seat section.

50. The snowmobile of claim 40, wherein the first, second, and third seat positions are disposed on a singular seat unit.

51. The snowmobile of claim 40, wherein the seat comprises first and second seat sections, the second seat section being removable, the first and second seat positions being on the first seat section, and the third seat position being on the second seat section.

52. A snowmobile, comprising:  
a frame;  
an engine disposed on the frame;  
a drive track disposed below the tunnel and connected operatively to the engine for propulsion of the snowmobile;  
two skis disposed on the frame;  
a steering device disposed on the frame and operatively connected to the two skis for steering the snowmobile; and  
a straddle-type seat disposed on the frame, wherein a back end of the seat extends behind a rearward-most portion of the frame.

53. The snowmobile of claim 52, wherein the back end of the seat extends behind the rearward-most portion of the frame by between 205 mm and 255 mm.

54. The snowmobile of claim 53, wherein the back end of the seat extends behind the rearward-most portion of the frame by between 215 mm and 245 mm.

55. The snowmobile of claim 54, wherein the back end of the seat extends behind the rearward-most portion of the frame by between 225 mm and 235 mm.

56. The snowmobile of claim 55, wherein the back end of the seat extends behind the rearward-most portion of the frame by about 230 mm.

57. The snowmobile of claim 52, wherein the back end of the seat extends behind the rearward-most portion of the frame by between 35 mm and 85 mm.

58. The snowmobile of claim 57, wherein the back end of the seat extends behind the rearward-most portion of the frame by between 45 mm and 75 mm.

59. The snowmobile of claim 58, wherein the back end of the seat extends behind the rearward-most portion of the frame by between 55 mm and 65 mm.

60. The snowmobile of claim 59, wherein the back end of the seat extends behind the rearward-most portion of the frame by about 60 mm.

61. The snowmobile of claim 52, wherein the back end of the seat extends behind the rearward-most portion of the frame by between 265 mm and 315 mm.

62. The snowmobile of claim 61, wherein the back end of the seat extends behind the rearward-most portion of the frame by between 275 mm and 305 mm.

63. The snowmobile of claim 62, wherein the back end of the seat extends behind the rearward-most portion of the frame by between 285 mm and 295 mm.

64. The snowmobile of claim 63, wherein the back end of the seat extends behind the rearward-most portion of the frame by about 290 mm.

65. The snowmobile of claim 52, further comprising a support member attached to the frame that extends upwardly and rearwardly from the frame to provide structural support for the seat behind the back end of the frame.

66. The snowmobile of claim 65, wherein the seat comprises first and second seat sections, the second seat section being removable.

67. A snowmobile, comprising:  
a frame having a tunnel;  
an engine disposed on the frame;  
a drive track disposed below the tunnel and connected operatively to the engine for propulsion of the snowmobile;  
two skis disposed on the frame;  
a steering device disposed on the frame and operatively connected to the two skis for steering the snowmobile;  
a straddle-type seat disposed on the frame behind the steering device; and  
a seat position disposed on the seat, wherein the seat position is disposed behind a rearward-most portion of the frame.

68. The snowmobile of claim 67, wherein the seat position is disposed behind the rearward-most portion of the frame by between 35 and 85 mm.

69. The snowmobile of claim 68, wherein the seat position is disposed behind the rearward-most portion of the frame by between 45 and 75 mm.

70. The snowmobile of claim 69, wherein the seat position is disposed behind the rearward-most portion of the frame by between 55 and 65 mm.

71. The snowmobile of claim 70, wherein the seat position is disposed behind the rearward-most portion of the frame by about 60 mm.



72. The snowmobile of claim 67, wherein the seat position is disposed behind the rearward-most portion of the frame by between 55 mm and 105 mm.

73. The snowmobile of claim 72, wherein the seat position is disposed behind the rearward-most portion of the frame by between 65 and 95 mm.

74. The snowmobile of claim 73, wherein the seat position is disposed behind the rearward-most portion of the frame by between 75 and 85 mm.

75. The snowmobile of claim 74, wherein the seat position is disposed behind the rearward-most portion of the frame by about 80 mm.

76. The snowmobile of claim 67, wherein the seat comprises first and second seat sections, the second seat section being behind the first seat section, the second seat section being removable, and the seat position being on the second seat section.

77. A snowmobile, comprising:  
a frame;  
a straddle-type seat disposed on the frame;  
a seat position defined by the seat;  
an engine disposed on the frame in front of the seat;  
a drive track disposed below the frame and connected operatively to the engine for propulsion of the snowmobile;  
a forward-most drive track axle disposed on the frame;  
two skis disposed on the frame;  
a steering device having a steering position; and  
a steering shaft operatively connecting the two skis to the steering device for steering the snowmobile, wherein the steering shaft is disposed over the engine at an angle  $\epsilon$  of less than  $45^\circ$  from vertical and the seat position is disposed less than 590 mm behind the forward-most drive track axle.

78. The snowmobile of claim 77, wherein the angle  $\varepsilon$  is between 25° and 40° from vertical.

79. The snowmobile of claim 78, wherein the angle  $\varepsilon$  is between 30° and 35° from vertical.

80. The snowmobile of claim 79, wherein the angle  $\varepsilon$  is 33° from vertical.

81. The snowmobile of claim 77, wherein the seat position is disposed behind the forward-most drive track axle by between 550 mm and 580 mm.

82. The snowmobile of claim 81, wherein the seat position is disposed behind the forward-most drive track axle by between 560 mm and 570 mm.

83. The snowmobile of claim 82, wherein the seat position is disposed behind the forward-most drive track axle by about 565 mm.

84. A snowmobile, comprising:  
a frame;  
a straddle-type seat disposed on the frame;  
a seat position defined by the seat;  
an engine disposed on the frame in front of the seat;  
a drive track disposed below the frame and connected operatively to the engine for propulsion of the snowmobile;  
a forward-most drive track axle disposed on the frame;  
two skis disposed on the frame;  
a steering device having a steering position; and  
a steering shaft operatively connecting the two skis to the steering device for steering the snowmobile, wherein the steering shaft is disposed over the engine at an angle  $\varepsilon$  of less than 45° from vertical and the steering position is disposed forward of the forward-most drive track axle.

85. The snowmobile of claim 84, wherein the angle  $\varepsilon$  is between 25° and 40° from vertical.

86. The snowmobile of claim 85, wherein the angle  $\varepsilon$  is between 30° and 35° from vertical.

87. The snowmobile of claim 86, wherein the angle  $\varepsilon$  is  $33^\circ$  from vertical.

88. The snowmobile of claim 84, wherein the steering position is disposed forward of the forward-most drive track axle by between 40 mm and 90 mm.

89. The snowmobile of claim 88, wherein the steering position is disposed forward of the forward-most drive track axle by between 50 mm and 80 mm.

90. The snowmobile of claim 89, wherein the steering position is disposed forward of the forward-most drive track axle by between 60 mm and 70 mm.

91. The snowmobile of claim 90, wherein the steering position is disposed forward of the forward-most drive track axle by about 65 mm.

92. A snowmobile, comprising:

- a frame;
- a straddle-type seat disposed on the frame;
- a seat position defined by the seat;
- an engine disposed on the frame in front of the seat;
- a drive track disposed below the frame and connected operatively to the engine for propulsion of the snowmobile;
- a forward-most drive track axle disposed on the frame;
- two skis disposed on the frame;
- a steering device having a steering position; and
- a steering shaft operatively connecting the two skis to the steering device for steering the snowmobile, wherein the seat position is disposed less than 590 mm behind the

forward-most drive track axle and the steering position is disposed forward of the forward-most drive track axle.

93. The snowmobile of claim 92, wherein the seat position is disposed between 550 mm and 580 mm behind the forward-most drive track axle.

94. The snowmobile of claim 93, wherein the seat position is disposed between 560 mm and 570 mm behind the forward-most drive track axle.

95. The snowmobile of claim 94, wherein the seat position is disposed about 565 mm behind the forward-most drive track axle.

96. The snowmobile of claim 92, wherein the steering position is disposed forward of the forward-most drive track axle by between 40 mm and 90 mm.

97. The snowmobile of claim 96, wherein the steering position is disposed forward of the forward-most drive track axle by between 50 mm and 80 mm.

98. The snowmobile of claim 97, wherein the steering position is disposed forward of the forward-most drive track axle by between 60 mm and 70 mm.

99. The snowmobile of claim 98, wherein the steering position is disposed forward of the forward-most drive track axle by about 65 mm.

100. A snowmobile, comprising:

a frame;

a straddle-type seat disposed on the frame;

a seat position defined by the seat;

an engine disposed on the frame in front of the seat;

a drive track disposed below the frame and connected operatively to the engine for propulsion of the snowmobile; and

a forward-most drive track axle disposed on the frame, wherein the seat position is disposed less than 590 mm behind the forward-most drive track axle and the frame is between about 1493 mm and 1913 mm long.

101. The snowmobile of claim 100, wherein the seat position is disposed between 550 mm and 580 mm behind the forward-most drive track axle.

102. The snowmobile of claim 101, wherein the seat position is disposed between 560 mm and 570 mm behind the forward-most drive track axle.

103. The snowmobile of claim 102, wherein the seat position is disposed about 565 mm behind the forward-most drive track axle.

104. A snowmobile, comprising:  
a frame;  
a straddle-type seat disposed on the frame;  
a seat position defined by the seat;  
an engine disposed on the frame in front of the seat;  
a drive track disposed below the frame and connected operatively to the engine for propulsion of the snowmobile;  
a forward-most drive track axle disposed on the frame;  
two skis disposed on the frame;  
a steering device having a steering position; and  
a steering shaft operatively connecting the two skis to the steering device for steering the snowmobile, wherein the steering position is disposed forward of the forward-most drive track axle and the frame is between about 1493 mm and 1913 mm long.

105. The snowmobile of claim 104, wherein the steering position is disposed forward of the forward-most drive track axle by between 40 mm and 90 mm.

106. The snowmobile of claim 105, wherein the steering position is disposed forward of the forward-most drive track axle by between 50 mm and 80 mm.

107. The snowmobile of claim 106, wherein the steering position is disposed forward of the forward-most drive track axle by between 60 mm and 70 mm.

108. The snowmobile of claim 107, wherein the steering position is disposed forward of the forward-most drive track axle by between 60 mm and 70 mm.